CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No: CACE/BBMP/BHS/134/2022-2023 Date :12.04.2023

GRADATION FOR GSB (Grading I)

Client : : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.

Agency: : Sri. Byadgere Honnesh Shivakumar, Contractor.

Name of work: : Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17

BIS Code: IS 2386 Part (1):1963
IS 2720 part (5):1985

Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	1852	1852	14.25	85.75	80-100
26.5	2065	3917	30.13	69.87	55-90
9.5	2148	6065	46.65	53.35	35-65
4.75	1785	7850	60.38	39.62	25-55
2.36	2598	10448	80.37	19.63	20-40
0.425	1895	12343	94.95	5.05	10-15
0.075	265	12608	96.98	3.02	<5

TABLE – 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

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3. Any Query regarding the report must be reported within 30 days from the date of testing.

for CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Bangalore - 560 073.
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Date :12.04.2023

JobNo: CACE/BBMP/BHS/154/2022-2023

GRADATION FOR GSB (Grading II)

Client : : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.

Agency: : Sri, Byadgere Honnesh Shivakumar, Contractor.

Name of work: : Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17

BIS Code: IS 2386 Part (1):1963
IS 2720 part (5):1985

Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
53	0	0	0.00	100	100
26.5	1852	1852	14.25	85.75	70-100
9.5	2065	3917	30.13	69.87	50-80
4.75	2148	6065	46.65	53.35	40-65
2.36	1785	7850	60.38	39.62	30-50
0.425	2598	10448	80.37	19.63	10-15
0.075	1895	12343	94.95	5.05	<5

TABLE – 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

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Date : 12.04.2023

JobNo: CACE/BBMP/BHR/154/2022-2023

GRADATION FOR GSB (Grading III)

Client : Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore

Agency: Sri. Byadgere Honnesh Shivakumar, Contractor.

Name of work: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17

BIS Code: IS 2386 Part (1):1963
IS 2720 part (5):1985

Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
53	0	0	0.00	100	100
26.5	1852	1852	14.25	85.75	55-75
4.75	2065	3917	30.13	69.87	10-30
0.075	2148	6065	46.65	53.35	<5

TABLE – 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

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Date :12.04.2023

JobNo: CACE/BBMP/BHS/154/2022-2023

GRADATION FOR GSB (Grading IV)

Client : : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency: : Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of work: : Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS Code: IS 2386 Part (1):1963
IS 2720 part (5):1985
Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
53	0	0	0.00	100	100
26.5	1852	1852	14.25	85.75	50-80
4.75	2065	3917	30.13	69.87	15-35
0.075	2148	6065	46.65	53.35	<5

TABLE – 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
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Date :12.04.2023

Job No: CAC3/BBMP/BHS/154/2022-2023

GRADATION FOR GSB (Grading VI)

Client : : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.

Agency: : Sri, Byadgere Honnesh Shivakumar, Contractor.

Name of work: : Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17

BIS Code: IS 2386 Part (I):1963
IS 2720 part (5):1985

Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
53	0	0	0.00	100	100
26.5	1852	1852	14.25	85.75	75-100
9.5	2065	3917	30.13	69.87	55-75
4.75	2148	6065	46.65	53.35	30-55
2.36	1785	7850	60.38	39.62	10-25
0.425	2598	10448	80.37	19.63	0-8
0.075	1895	12343	94.95	5.05	0-3

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	21.80	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

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Lab No: CACE/BBMP/2023/198/2022-2023 Date: 13.04.2023

GRADATION FOR GSB (Grading V)

Client : **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : Sri, Byadigere Hemnesh Shivakumar, Contractor.

Name of work : Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No: 17

BIS Code : IS 2386 Part (1):1963
: IS 2720 part (3):1985

Date of Testing :10.04.2023 to 12.04.2023

Oven Dry Wt (gm) : 13000

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirements as per MORTH 5th edition table 400.1
75	0	0	0.00	100	100
53	772	772	5.94	94.06	80-100
26.5	2100	2872	22.09	77.91	55-90
9.5	2045	4917	37.82	62.18	35-65
4.75	1928	6845	52.65	47.35	25-50
2.36	3680	10525	80.96	19.04	10-20
0.85	1713	12238	94.14	5.86	2-10
0.425	112	12350	95.00	5.00	0-5

Table 2

Sl. No.	Particulars	Test Results	Requirements as per MORTH 5th edition table 400.2
1	Liquid Limit, %	20.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading V

Note:

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Job No. : CACE/BBMP/BHS/154/2022-2023 Date : 14.04.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	14.04.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	10.9	13.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	11.4	11.9	
	Combined Flakiness & Elongation index	22.3	25.4	

Note:

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Job No.: CACE/BBMP/BHS/134/2022-2023 Date: 14.04.2023

Aggregate Impact Value

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	14.04.2023

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.14	21.50	**21.82**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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Job No: CACL/BBMP/BHS/134/2022-2023 Date: 14.04.2023

Aggregate Impact Value

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	14.04.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.14	21.50	**21.82**

Comments:
→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Job No: CACE/BBMP/BHS/134/2022-2023 Date: 14.04.2023

Aggregate Impact Value

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Hoonesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam.
Date of Testing	14.04.2023

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.14	21.50	**21.82**

Comments:
→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date: 14.04.2023

Aggregate Impact Value

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri. Byadgere Honnesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	14.04.2023

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.14	21.50	**21.82**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date: 14.04.2023

Aggregate Impact Value

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore
Agency	: Sri. Byadgere Hemesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	14.04.2023

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.14	21.50	**21.82**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

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No. 01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah Layout, Nagasandra, Bangalore - 560 073.
Ph: 9591618639, GSTIN: 29CNWPD9510K1ZB, Email: civilaimconsultants@gmail.com

CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001:2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/BHS/134/2022-2023 Date : 14/04/2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hoonnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part 1):1963(RA 2011)
Date of Testing	14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	312	312	3.1	96.9	95-100
22.4	2315	2627	26.3	73.7	60-80
11.2	2315	4942	49.4	50.6	40-60
4.75	1645	6587	65.9	34.1	25-40
2.36	1315	7902	79.0	21.0	15-30
0.600	1025	8927	89.3	10.7	8-22
0.075	585	9512	95.1	4.9	0-5

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Job No: CACE/BBMP/BHS/154/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hoonesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part 1):1963(RA 2011)
Date of Testing	14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No.: CACE/BBMP/2015/154/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer**, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri. Byadigere Hemaiah Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No: 17
IS Code:	: IS 2386 (Part 1):1963(RA 2011)
Date of Testing	: 14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry Wt, gms: 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	312	312	3.1	96.9	95-100
22.4	2315	2627	26.3	73.7	60-80
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Job No.: CACE/BBMP/BHS/134/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Hemnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part I):1963(RA 2011)
Date of Testing	14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No.: CAC/BBMP/BHS/158/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hemesh Shivakumar, Contractor
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part I) 1963(RA 2011)
Date of Testing	: 14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, gms 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No: CACL/BBMP/2023/154/2023-2024 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore
Agency	: Sri. Byadgere Hoonnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part 1):1963(RA 2011)
Date of Testing	: 14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, gms: 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400,13
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GRADATION FOR WMM

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore
Agency	: Sri, Bradgere Hemesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2386 (Part I):1963(RA 2011)
Date of Testing	: 14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, gms: 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No. : CACL/BBMP/BHS/134/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hoomesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	: IS 2386 (Part I):1963(RA 2011)
Date of Testing	14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, grar 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No.: CAC/BBMP/BHS/158/2022-2023 Date : 14.04.2023

GRADATION FOR WMM

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Hanmesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2386 (Part I):1963(RA 2011)
Date of Testing	14.04.2023
Material Type	: Wet Mix Macadam

Oven Dry.Wt, gms: 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
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Job No : CAC/[illegible]/2023 NABL Accredited as per ISO/IEC 17025:2017 Laboratory

Date : 18.04.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Agency	: Sri. Byadgere Hemesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/BHS/134/2022-2023 Date : 16.04.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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Date : 16.04.2023

Job No.: CACE/BBMP/BHS/154/2022-2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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Authorised Signatory

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Lab No.: CAC/BBMP/3015/154/2022-2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date : 16.04.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CAC/BBMP/B410/154/2022-2023 Date : 16.04.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hoanesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No: CA/[illegible] Date : 16.04.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hemnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

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Job No.: CACE/BBMP/BHS/154/2022-2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Date : 16.04.2023

ATTERBERG LIMITS TEST FOR WMM

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IS Code:	IS 2720(Part 5):1985
Date of Testing	14.04.2023 to 16.04.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
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Job No. CACE/BBMP/BHS/134/2022-2023 Date : 10.07.2023

DETERMINATION OF RATE OF SPREAD PRIME COAT

CLIENT	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	:	Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
DATE OF TESTING	:	10.07.2023

On WMM

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	mt	0.45 X 0.45	0.45 X 0.45
Area of Plate (a)	Sq.m	0.2025	0.2025
Intial Wt of empty Plate (b)	Kg	1.625	1.625
Final weight of plate after application of prime /Tack Coat (c)	Kg	1.752	1.751
Weight of Prime/Tack Coat (d=c-b)	Kg	0.1270	0.1260
Rate of spread of prime /tack coat	kg/Sq.m	0.627	0.622
Average	kg/Sq.m	0.625	
Specified Limit	kg/Sq.m	0.60 Kg/sq.m	

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⇒ The results of the materials tested meets the standards and hence can be used for the work.

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date : 10.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	10.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	483	482.5	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17	17.50	
7. Bitumen content in %	3.40	3.50	
8. Average	3.45		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.5	6.94	6.94	93.06	90-100
13.2	171.6	35.53	42.46	57.54	56-88
4.75	154.9	32.07	74.53	25.47	16-36
2.36	55.9	11.57	86.11	13.89	4-19
0.3	36.4	7.54	93.64	6.36	2-10
0.075	8.2	1.70	95.34	4.66	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	31.5	6.53	6.53	93.47	90-100
13.2	145.6	30.18	36.70	63.30	56-88
4.75	186.2	38.59	75.30	24.70	16-36
2.36	78.6	16.29	91.59	8.41	4-19
0.3	26.5	5.49	97.08	2.92	2-10
0.075	11.5	2.38	99.46	0.54	0-8

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Job No.: CACE/BBMP/BOM/154/2022-2023 Date : 10.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri. Byadgere Hemmesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	10.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	483	482.5	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17	17.50	
7. Bitumen content in %	3.40	3.50	
8. Average	3.45		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.5	6.94	6.94	93.06	90-100
13.2	171.6	35.53	42.46	57.54	56-88
4.75	154.9	32.07	74.53	25.47	16-36
2.36	55.9	11.57	86.11	13.89	4-19
0.3	36.4	7.54	93.64	6.36	2-10
0.075	8.2	1.70	95.34	4.66	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	31.5	6.53	6.53	93.47	90-100
13.2	145.6	30.18	36.70	63.30	56-88
4.75	186.2	38.59	75.30	24.70	16-36
2.36	78.6	16.29	91.59	8.41	4-19
0.3	26.5	5.49	97.08	2.92	2-10
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Job No.: CACL/BBMP/BHS/134/2022-2023 Date : 10.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No: 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	10.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	483	482.5	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17	17.50	
7. Bitumen content in %	3.40	3.50	
8. Average	3.45		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.5	6.94	6.94	93.06	90-100
13.2	171.6	35.53	42.46	57.54	56-88
4.75	154.9	32.07	74.53	25.47	16-36
2.36	55.9	11.57	86.11	13.89	4-19
0.3	36.4	7.54	93.64	6.36	2-10
0.075	8.2	1.70	95.34	4.66	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	31.5	6.53	6.53	93.47	90-100
13.2	145.6	30.18	36.70	63.30	56-88
4.75	186.2	38.59	75.30	24.70	16-36
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0.3	26.5	5.49	97.08	2.92	2-10
0.075	11.5	2.38	99.46	0.54	0-8

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Date : 10.07.2023

Job No: CACE/BBMP/BHS/134/2022-2023

Specific Gravity And Water Absorption Test

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hounesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No: 17
Source / Location	Hotmix Plant, Bangalore.
IS code:	IS 2386 (Part 3):1963(RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	10.07.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2019	2025	
2	Weight of basket suspended in water	W_2 g	752	752	752	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1270	1267	1273	
4	Weight of saturated surface dry aggregate in air	W_3 g	2017	2015	2018	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	747	748	745	
6	Weight of oven dried aggregate	W_4 g	2010	2009	2010	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.691	2.686	2.698	2.694
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.716	2.708	2.727	2.722
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.35%	0.30%	0.40%	0.37%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%(AS per MORTH specification 5th edition table no 500.6)

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Job No. CACE/BBMP/2023/334/2022-2023 Date: 13.07.2023

DETERMINATION OF RATE OF SPREAD TACK COAT

CLIENT	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	:	Sri, Byadgere Hoonesh Shivakumar, Contractor.
NAME OF THE WORK	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
DATE OF TESTING	:	13.07.2023

On DBM

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	mt	0.45 X 0.45	0.45 X 0.45
Area of Plate (a)	Sq.m	0.2025	0.2025
Intial Wt of empty Plate (b)	Kg	1.625	1.625
Final weight of plate after application of prime /Tack Coat (c)	Kg	1.676	1.677
Weight of Prime/Tack Coat (d=c-b)	Kg	0.0510	0.0520
Rate of spread of prime /tack coat	kg/Sq.m	0.252	0.257
Average	kg/Sq.m	0.254	
Specified Limit	kg/Sq.m	0.25 Kg/sq.m	

Note:

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→ Any Query regarding the report must be reported within 30 days from the date of testing.

→ The results of the materials tested meets the standards and hence can be used for the work.

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Job No: CACE/BBMP/2023/154/2023-2024 Date : 10.07.2023

DETERMINATION OF RATE OF SPREAD PRIME COAT

CLIENT	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	:	Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
DATE OF TESTING	:	10.07.2023

On WMM

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	mt	0.45 X 0.45	0.45 X 0.45
Area of Plate (a)	Sq.m	0.2025	0.2025
Intial Wt of empty Plate (b)	Kg	1.625	1.625
Final weight of plate after application of prime /Tack Coat (c)	Kg	1.808	1.806
Weight of Prime/Tack Coat (d=c-b)	Kg	0.1830	0.1810
Rate of spread of prime /tack coat	kg/Sq.m	0.904	0.894
Average	kg/Sq.m	0.899	
Specified Limit	kg/Sq.m	0.90 Kg/sq.m	

Note:

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⇒ The results of the materials tested meets the standards and hence can be used for the work.

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date : 10.07.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS Code:	IS 2386(Part 1): 1963 (RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	10.07.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.6
1	Flakiness Index	9.8	10.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	12.5	11.3	
	Combined Flakiness & Elongation index	22.3	21.8	

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Date: 10.07.2023

Job No.: CACE/BBMP/BHS/154/2022-2023

TEST REPORT

Client	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	:	Sri, Byadgere Hoonnah Shivakumar, Contractor.
Name of the work	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source of location	:	Hot mix Plant, Bangalore, VG 30
Date of testing	:	10.07.2023

The results of the tests conducted on the bitumen sample using for Bituminous Macadam

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	54	Min 45
2	Softening point, ^{0}C	52	Min. 47
3	Ductility at 27^{0}C, cm	100 >	Min. 40
4	Flash Point, ^{0}C	289	Min. 220

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Date : 10.07.2023

Job No.: CACE/BBMP/B185/158/2022-2023

Aggregate Impact Value

Client	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri. Byadgere Hemmesh Shivakumar, Contractor
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Source / Location	Hot mix Plant, Bangalore
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	10.07.2023

Sl No.	Details	Test No. 1	Test No. 4	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	400	400	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	315	314	
4	Aggregate Impact value = percent fines	21.25	21.50	
	100* (W_2/W_1)%			**21.38**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30% (Specification as per MORTH 5th edition table no 500.6)

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Job No.: CACR/BBMP/BHS/154/2022-2023

Date: 10.07.2023

Aggregate Gradation Test

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of the work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Sample ID	Hotmix Plant, Bangalore.
IS Code:	IS 2386 (Part 1):1963(RA 2002)
Type of Mix	Bituminous Macadam
Date of Testing	10.07.2023

5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	365	7.30	7.30	92.70	90-100	
13.2	1852	37.04	44.34	55.66	56-88	
4.75	1715	34.30	78.64	21.36	16-36	
2.36	652	13.04	91.68	8.32	4-19	
0.3	145	2.90	94.58	5.42	2-10	
0.075	85	1.70	96.28	3.72	0-8	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	412	8.24	8.24	91.76	90-100	
13.2	1563	31.26	39.50	60.50	56-88	
4.75	1524	30.48	69.98	30.02	16-36	
2.36	659	13.18	83.16	16.84	4-19	
0.3	578	11.56	94.72	5.28	2-10	
0.075	115	2.30	97.02	2.98	0-8	

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Job No.: CACL/BBMP/BHS/154/2022-2023 Date : 11.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	11.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.5	482	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00	
7. Bitumen content in %	3.50	3.60	
8. Average	3.55		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.9	7.03	7.03	92.97	90-100
13.2	175.6	36.39	43.42	56.58	56-88
4.75	152.6	31.63	75.05	24.95	16-36
2.36	52.6	10.90	85.95	14.05	4-19
0.3	35.9	7.44	93.39	6.61	2-10
0.075	8.5	1.76	95.15	4.85	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	26.9	5.58	5.58	94.42	90-100
13.2	152.1	31.56	37.14	62.86	56-88
4.75	178.6	37.05	74.19	25.81	16-36
2.36	98.6	20.46	94.65	5.35	4-19
0.3	15.2	3.15	97.80	2.20	2-10
0.075	5.6	1.16	98.96	1.04	0-8

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date : 11.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	11.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.5	482	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00	
7. Bitumen content in %	3.50	3.60	
8. Average	3.55		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.9	7.03	7.03	92.97	90-100
13.2	175.6	36.39	43.42	56.58	56-88
4.75	152.6	31.63	75.05	24.95	16-36
2.36	52.6	10.90	85.95	14.05	4-19
0.3	35.9	7.44	93.39	6.61	2-10
0.075	8.5	1.76	95.15	4.85	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	26.9	5.58	5.58	94.42	90-100
13.2	152.1	31.56	37.14	62.86	56-88
4.75	178.6	37.05	74.19	25.81	16-36
2.36	98.6	20.46	94.65	5.35	4-19
0.3	15.2	3.15	97.80	2.20	2-10
0.075	5.6	1.16	98.96	1.04	0-8

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Date : 11.07.2023

Job No.: CACE/BBMP/BHS/154/2022-2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Honnesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	11.07.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.5	482	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00	
7. Bitumen content in %	3.50	3.60	
8. Average	3.55		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	33.9	7.03	7.03	92.97	90-100
13.2	175.6	36.39	43.42	56.58	56-88
4.75	152.6	31.63	75.05	24.95	16-36
2.36	52.6	10.90	85.95	14.05	4-19
0.3	35.9	7.44	93.39	6.61	2-10
0.075	8.5	1.76	95.15	4.85	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	26.9	5.58	5.58	94.42	90-100
13.2	152.1	31.56	37.14	62.86	56-88
4.75	178.6	37.05	74.19	25.81	16-36
2.36	98.6	20.46	94.65	5.35	4-19
0.3	15.2	3.15	97.80	2.20	2-10
0.075	5.6	1.16	98.96	1.04	0-8

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Job No: CACE/BBMP/BHS/154/2022-2023

Date: 13.07.2023

TEST REPORT

Client	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	:	Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of the work	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source of location	:	Hot mix Plant, Bangalore, VG 30
Date of testing	:	13.07.2023

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

SL No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	54	Min 45
2	Softening point, °C	58	Min. 47
3	Ductility at 27°C, cm	> 100	Min. 40
4	Flash Point, °C	263	Min. 220

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

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Job No.: CACE/BBMP/BHS/154/2022-2023

Date: 17.07.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	:	Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of the Work	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Type of Mix	:	Bituminous Concrete
Date of Testing	:	14.07.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.45	9.82	9 Kn (min)
2	Marshal flow, mm	3.63	3.63	2 – 4
3	Percent air voids in Mineral Aggregate	14.21	13.42	13 – 15
4	Voids in Compacted Mix	3.52	3.49	3 – 6
5	Percent Voids filled with Bitumen	67.78	69.72	65 - 75
6	Density, g/cc	2.28	2.26	--

Note:

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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Job No.: CACE/BBMP/BHS/154/2022-2023 Date: 13.07.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of the Work	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Type of Mix	:	Bituminous Concrete
Date of Testing	:	13.07.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.45	9.82	9 Kn (min)
2	Marshal flow, mm	3.63	3.63	2 – 4
3	Percent air voids in Mineral Aggregate	14.21	13.42	13 – 15
4	Voids in Compacted Mix	3.52	3.49	3 – 6
5	Percent Voids filled with Bitumen	67.78	69.72	65 - 75
6	Density, g/cc	2.28	2.26	--

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Job No.: CACL/BBMP/BHS/134/2022-2023 Date: 13.07.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	:	Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of the Work	:	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Type of Mix	:	Bituminous Concrete
Date of Testing	:	13.07.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.45	9.82	9 Kn (min)
2	Marshal flow, mm	3.63	3.63	2 – 4
3	Percent air voids in Mineral Aggregate	14.21	13.42	13 – 15
4	Voids in Compacted Mix	3.52	3.49	3 – 6
5	Percent Voids filled with Bitumen	67.78	69.72	65 - 75
6	Density, g/cc	2.28	2.26	--

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Job No.: CACS/BBMP/BH45/154/2022-2023 13/07/2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP,Bangalore
AGENCY	Sri. Pradeep Hemesh Shivakumar, Contractor.
NAME OF THE WORK	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Source of Location	C1&C2 AGB layout 10th main road
Type of Mix	Bituminous Concrete(From Corecutting)
DATE OF TESTING	13.07.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	550
2. Weight of Mixture after Test, g	473.3	520.5
3. Weight of Asphalt and Mineral matter Extracted, g	26.7	29.5
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	26.7	29.5
7. Bitumen content in %	5.34	5.36
8. Average	5.35	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	12.5	12.5	2.6	97.4	90 - 100
9.5	53.3	65.8	13.9	86.1	70 - 88
4.75	96.6	162.4	34.3	65.7	53 - 71
2.36	45.5	207.9	43.9	56.1	42 - 58
1.18	43.3	251.2	53.1	46.9	34 - 48
0.600	47.8	299	63.2	36.8	26 - 38
0.300	55.2	354.2	74.8	25.2	18 - 28
0.150	34.6	388.8	82.1	17.9	12 - 20
0.075	51.1	439.9	92.9	7.1	4 - 10

SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	15.1	15.1	2.9	97.1	90 - 100
9.5	62.5	77.6	14.9	85.1	70 - 88
4.75	96.4	174	33.4	66.6	53 - 71
2.36	45.4	219.4	42.2	57.8	42 - 58
1.18	52.6	272	52.3	47.7	34 - 48
0.600	52.4	324.4	62.3	37.7	26 - 38
0.300	45.9	370.3	71.1	28.9	18 - 28
0.150	25.4	395.7	76.0	24.0	12 - 20
0.075	46.3	442	84.9	15.1	4 - 10

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	Assistant Executive Engineer, Bangalore Sub Division, BBMP, Bangalore
AGENCY	Sri. Byadigere Hemanth Shankaraiah, Contractor
NAME OF THE WORK	Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No: 19
Source of Location	CH&C 2 AGB layout 10th main road
Type of Mix	Bituminous Concrete (Fresh Concreting)
DATE OF TESTING	13.07.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	550
2. Weight of Mixture after Test, g	473.3	520.5
3. Weight of Asphalt and Mineral matter Extracted, g	26.7	29.5
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g (corrected)	26.7	29.5
7. Bitumen content in %	5.34	5.36
8. Average	5.35	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	12.5	12.5	2.6	97.4	90 - 100
9.5	53.3	65.8	13.9	86.1	70 - 88
4.75	96.6	162.4	34.3	65.7	53 - 71
2.36	45.5	207.9	43.9	56.1	42 - 58
1.18	43.3	251.2	53.1	46.9	34 - 48
0.600	47.8	299	63.2	36.8	26 - 38
0.300	55.2	354.2	74.8	25.2	18 - 28
0.150	34.6	388.8	82.1	17.9	12 - 20
0.075	51.1	439.9	92.9	7.1	4 - 10

SIEVE SIZE mm	Test 2 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	15.1	15.1	2.9	97.1	90 - 100
9.5	62.5	77.6	14.9	85.1	70 - 88
4.75	96.4	174	33.4	66.6	53 - 71
2.36	45.4	219.4	42.2	57.8	42 - 58
1.18	52.6	272	52.3	47.7	34 - 48
0.600	52.4	324.4	62.3	37.7	26 - 38
0.300	45.9	370.3	71.1	28.9	18 - 28
0.150	25.4	395.7	76.0	24.0	12 - 20
0.075	46.3	442	84.9	15.1	4 - 10

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Job No.: CACE/BBMP/BHS/134/2022-2023 13.07.2023

Aggregate Gradation Test

IS : 2386 Part I

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Hoonesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS Code	:IS 2386(Part 1):1963
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	13.07.2023

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	350	7.00	7.00	93.00	90 - 100	
9.5	750	15.00	22.00	78.00	70 - 88	
4.75	630	12.60	34.60	65.40	53 - 71	
2.36	465	9.30	43.90	56.10	42 - 58	
1.18	530	10.60	54.50	45.50	34 - 48	
0.600	460	9.20	63.70	36.30	26 - 38	
0.300	563	11.26	74.96	25.04	18 - 28	
0.150	355	7.10	82.06	17.94	12 - 20	
0.075	465	9.30	91.36	8.64	4 - 10	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	444	8.88	8.88	91.12	90 - 100	
9.5	663	13.26	22.14	77.86	70 - 88	
4.75	911	18.22	40.36	59.64	53 - 71	
2.36	722	14.44	54.80	45.20	42 - 58	
1.18	433	8.66	63.46	36.54	34 - 48	
0.600	377	7.54	71.00	29.00	26 - 38	
0.300	499	9.98	80.98	19.02	18 - 28	
0.150	299	5.98	86.96	13.04	12 - 20	
0.075	270	5.40	92.36	7.64	4 - 10	

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Job No.: CACE/BBMP/BHS/154/2022-2023 15.07.2023

Specific Gravity And Water Absorption Test

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Homnesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS Code	:IS 2386(Part 3):1963
Type of Mix	Bituminous Concrete
Date of Testing	13.07.2023 to 15.07.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2020	2022	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1267	1265	1267	
4	Weight of saturated surface dry aggregate in air	W_3 g	2011	2013	2012	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	744	748	745	
6	Weight of oven dried aggregate	W_4 g	2002	2004	2006	
7	Specific Gravity	$W_4/(W_3-W_s)$	2.691	2.679	2.693	2.688
8	Apparent Specific gravity	$W_4/(W_4-W_s)$	2.724	2.712	2.714	2.717
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.45%	0.45%	0.30%	0.40%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%(MORTH table 500.16)

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Job No. : CACE/BBMP/BHS/154/2022-2023

13.07.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadigere Honnesh Shivakumar, Contractor.
Name of Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	13.07.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	11.5	13.6	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	13.5	10.8	
	Combined Flakiness & Elongation index	25.00	24.40	

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13.07.2023

Job No.: CACE/BBMP/BHS/154/2022-2023

Aggregate Impact Value

Client	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
Agency	: Sri, Byadgere Honnesh Shivakumar, Contractor.
Name of the Work	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
BIS Code	:IS 2386(Part 4):1963
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Bituminous Concrete
Date of Testing	13.07.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	88	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	294	294	
4	Aggregate Impact value = percent fines 100* (W_2/W_1) percent	22.63	23.04	**22.83**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: **Assistant Executive Engineer,** Shettyhalli Sub Division, BBMP,Bangalore.
AGENCY	: Sri, Byadgere Homesh Shivakumar, Contractor.
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
DATE OF TESTING	: 13.07.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.5	472.3
3. Weight of Asphalt and Mineral matter Extracted, g	27.5	27.7
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.5	27.7
7. Bitumen content in %	5.50	5.54
8. Average	5.52	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	19	19	4.0	96.0	90 - 100
9.5	71	90	19.0	81.0	70 - 88
4.75	93	183	38.7	61.3	53 - 71
2.36	52	235	49.7	50.3	42 - 58
1.18	47	282	59.7	40.3	34 - 48
0.600	40	322	68.1	31.9	26 - 38
0.300	46	368	77.9	22.1	18 - 28
0.150	33	401	84.9	15.1	12 - 20
0.075	51	452	95.7	4.3	4 - 10

SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	15.6	15.6	3.3	96.7	90 - 100
9.5	66	81.6	17.3	82.7	70 - 88
4.75	78	159.6	33.8	66.2	53 - 71
2.36	74	233.6	49.5	50.5	42 - 58
1.18	43	276.6	58.6	41.4	34 - 48
0.600	52	328.6	69.6	30.4	26 - 38
0.300	48	376.6	79.7	20.3	18 - 28
0.150	32	408.6	86.5	13.5	12 - 20
0.075	28	436.6	92.4	7.6	4 - 10

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Job No.: CACE/BBMP/BHS/154/2022-2023 13.07.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	:Assistant Executive Engineer, Shettyhalli Sub Division, BBMP Bangalore
AGENCY	: Sri, Byadigere Hoonnesh Shivakumar, Contractor
NAME OF THE WORK	: Construction of Roads and Drains in Chikkasandra and AGB layout in Ward No. 17
DATE OF TESTING	13.07.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.5	472.3
3. Weight of Asphalt and Mineral matter Extracted, g	27.5	27.7
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.5	27.7
7. Bitumen content in %	5.50	5.54
8. Average	5.52	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	19	19	4.0	96.0	90 - 100
9.5	71	90	19.0	81.0	70 - 88
4.75	93	183	38.7	61.3	53 - 71
2.36	52	235	49.7	50.3	42 - 58
1.18	47	282	59.7	40.3	34 - 48
0.600	40	322	68.1	31.9	26 - 38
0.300	46	368	77.9	22.1	18 - 28
0.150	33	401	84.9	15.1	12 - 20
0.075	51	452	95.7	4.3	4 - 10

SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	15.6	15.6	3.3	96.7	90 - 100
9.5	66	81.6	17.3	82.7	70 - 88
4.75	78	159.6	33.8	66.2	53 - 71
2.36	74	233.6	49.5	50.5	42 - 58
1.18	43	276.6	58.6	41.4	34 - 48
0.600	52	328.6	69.6	30.4	26 - 38
0.300	48	376.6	79.7	20.3	18 - 28
0.150	32	408.6	86.5	13.5	12 - 20
0.075	28	436.6	92.4	7.6	4 - 10

Note:

1. This test report should not be reproduced except in full, without written approval of the laboratory
2. The results indicated above are based on the tests carried out on the samples collected at site.
3. Any Query regarding the report must be reported within 30 days from the date of testing

For CIVIL AIM CONSULTANTS & ENGINEERS

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